FIG.1

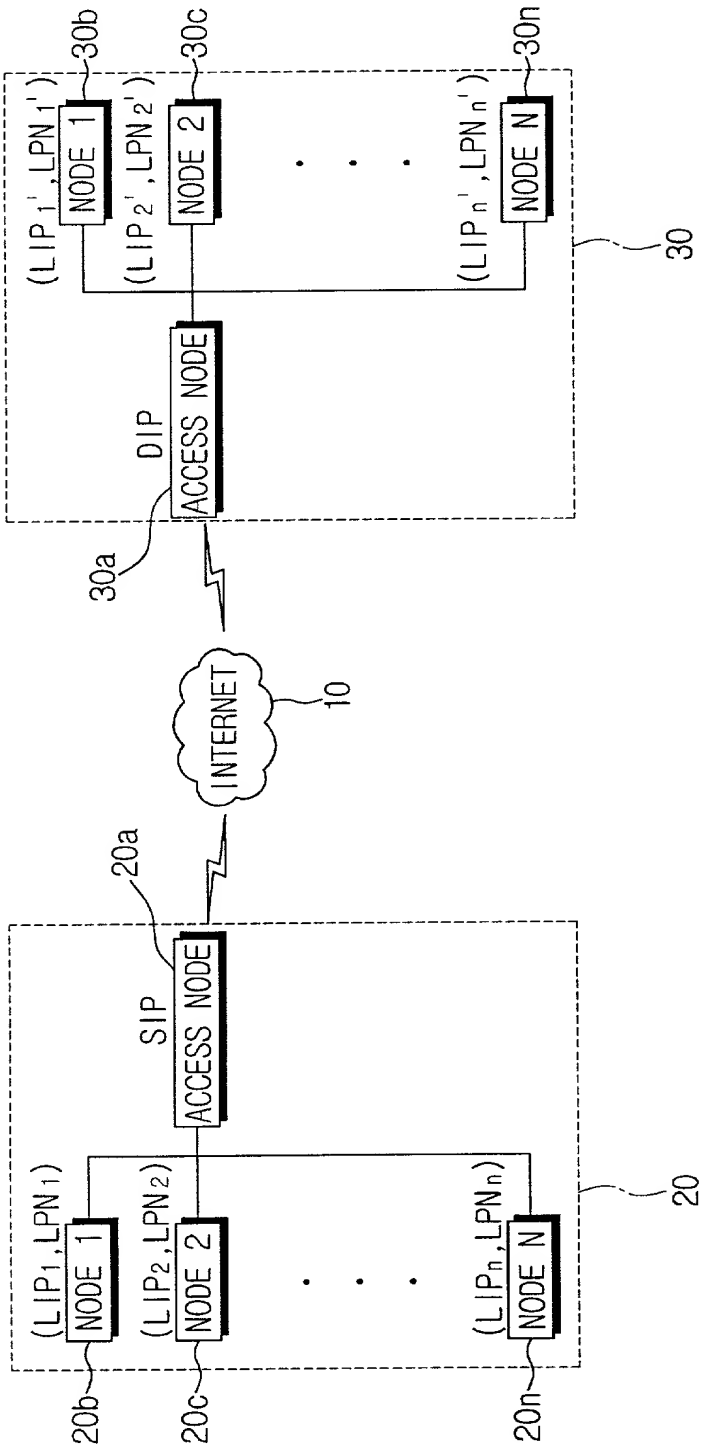
30b
30c
30n
(LIP1',LPN1')
(LIP2',LPN2')
(LIPn',LPNn')
NODE 1
NODE 2
NODE N
30
DIP
ACCESS NODE
30a
INTERNET
10
20a
SIP
ACCESS NODE
(LIP1,LPN1)
(LIP2,LPN2)
(LIPn,LPNn)
20
20b
20c
20n

FIG.2

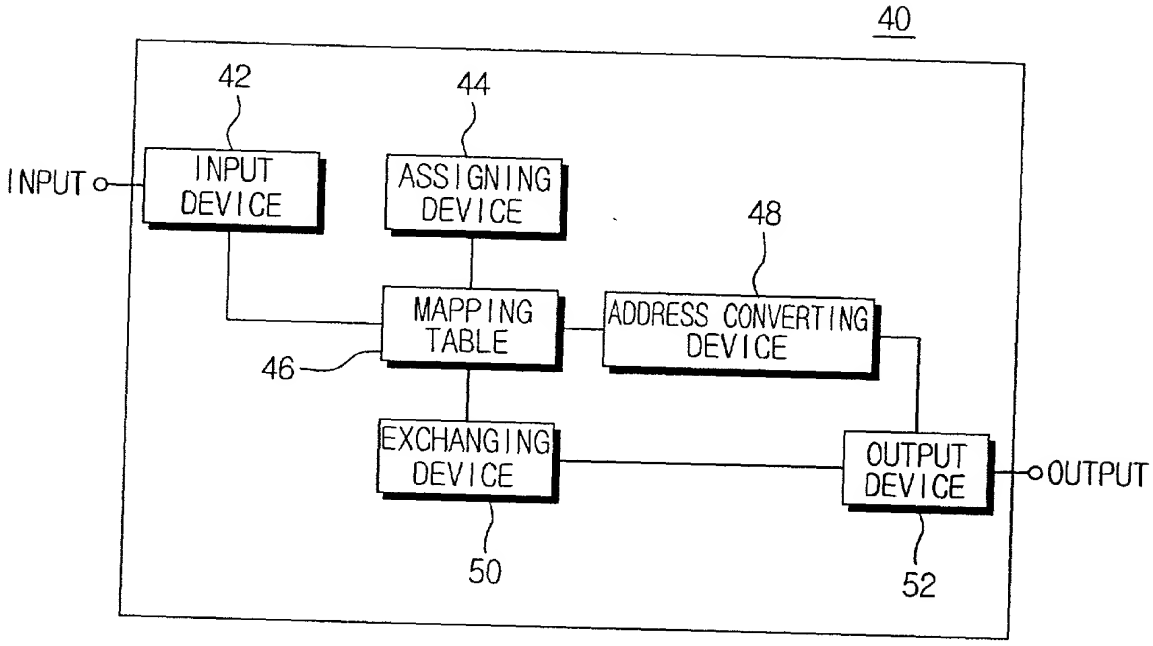

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FIG.3

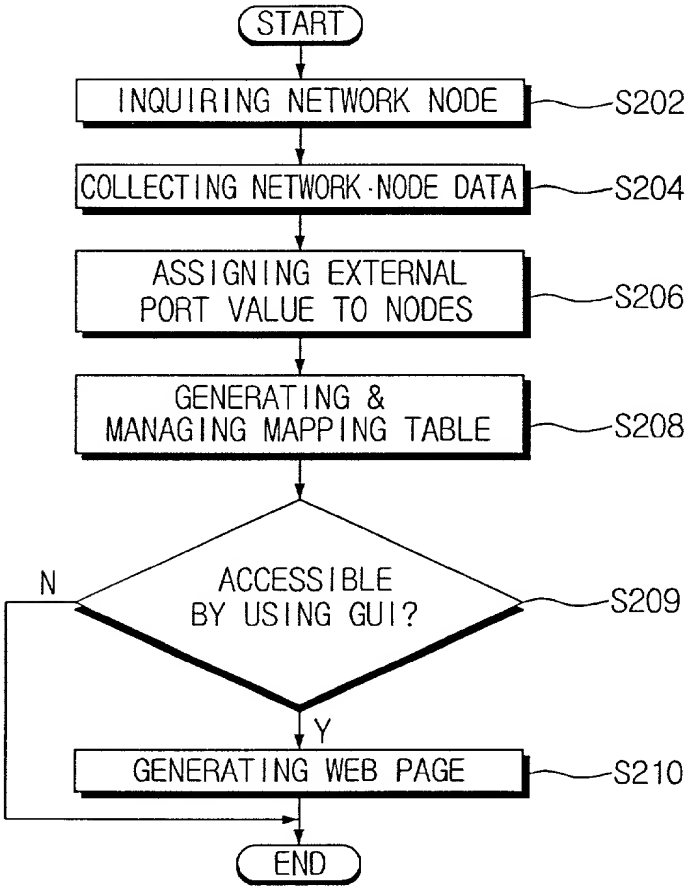
START
INQUIRING NETWORK NODE
S202
COLLECTING NETWORK-NODE DATA
S204
ASSIGNING EXTERNAL PORT VALUE TO NODES
S206
GENERATING & MANAGING MAPPING TABLE
S208
ACCESSIBLE BY USING GUI?
S209
N
Y
GENERATING WEB PAGE
S210
END

FIG.4

(a)

HARDWARE ADDRESS	PRIVATE IP ADDRESS	INTERNAL PORT VALUE	GLOBAL IP ADDRESS	EXTERNAL PORT VALUE
HA_1	LIP_1	LPN_1	SIP	GPN_1
HA_2	LIP_2	LPN_2	SIP	GPN_2
⋮	⋮	⋮	⋮	⋮
HA_n	LIP_n	LPN_n	SIP	GPN_n

(b)

HARDWARE ADDRESS	PRIVATE IP ADDRESS	INTERNAL PORT VALUE	GLOBAL IP ADDRESS	EXTERNAL PORT VALUE
HA_1'	LIP_1'	LPN_1'	DIP	GPN_1'
HA_2'	LIP_2'	LPN_2'	DIP	GPN_2'
⋮	⋮	⋮	DIP	⋮
HA_n'	LIP_n'	LPN_n'	DIP	GPN_n'

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FIG.5

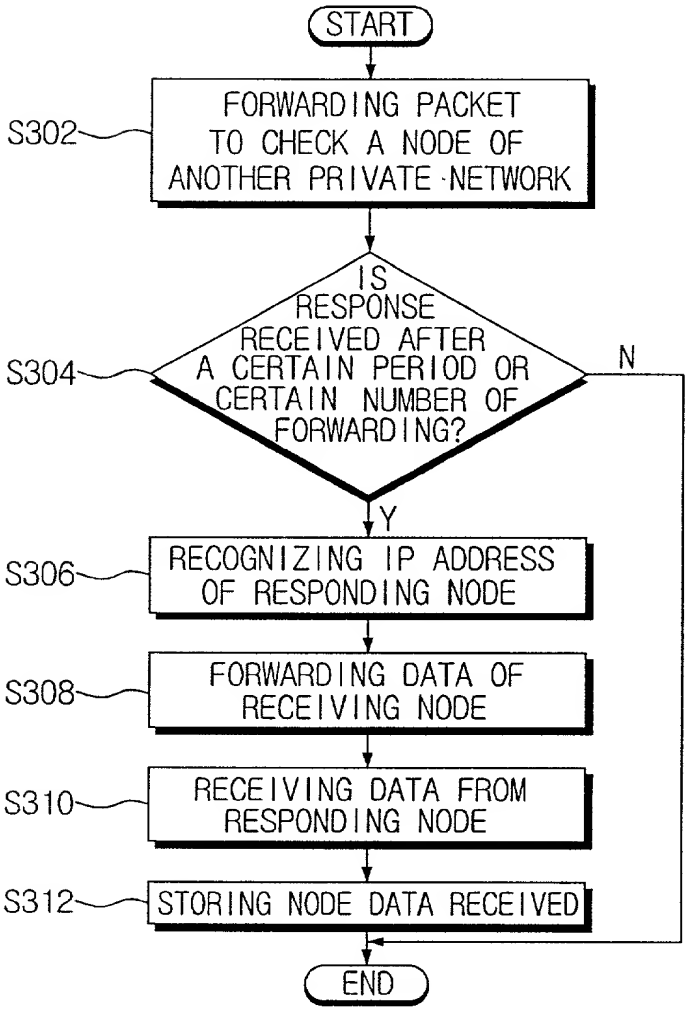
START
S302
FORWARDING PACKET TO CHECK A NODE OF ANOTHER PRIVATE NETWORK
S304
IS RESPONSE RECEIVED AFTER A CERTAIN PERIOD OR CERTAIN NUMBER OF FORWARDING?
N
Y
S306
RECOGNIZING IP ADDRESS OF RESPONDING NODE
S308
FORWARDING DATA OF RECEIVING NODE
S310
RECEIVING DATA FROM RESPONDING NODE
S312
STORING NODE DATA RECEIVED
END

FIG.6

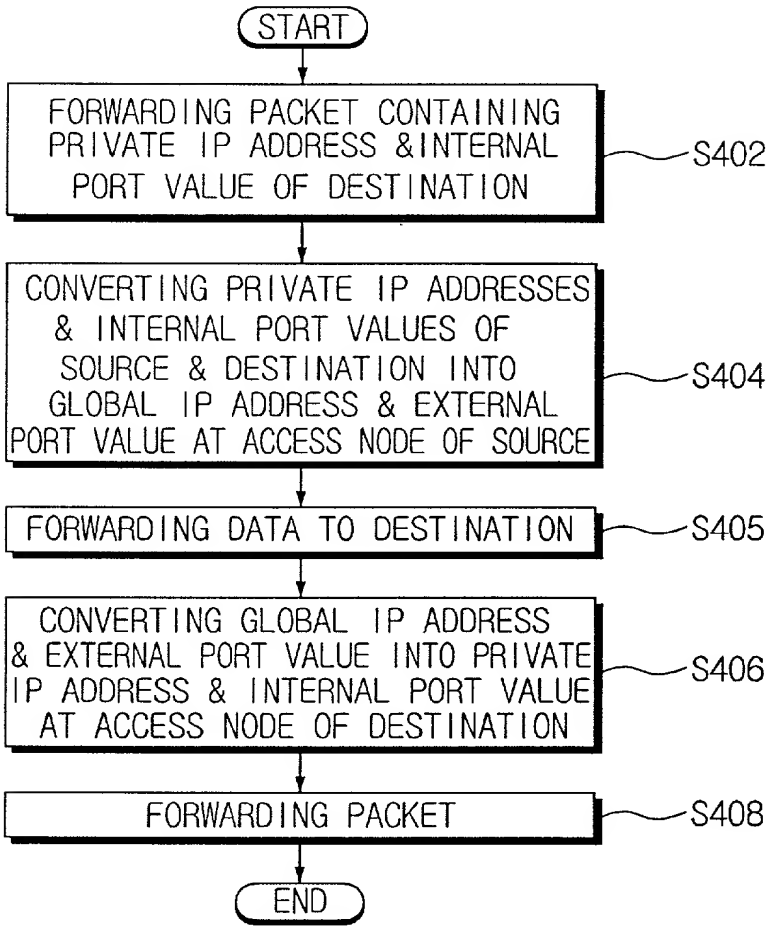
START
FORWARDING PACKET CONTAINING PRIVATE IP ADDRESS &INTERNAL PORT VALUE OF DESTINATION
S402
CONVERTING PRIVATE IP ADDRESSES & INTERNAL PORT VALUES OF SOURCE & DESTINATION INTO GLOBAL IP ADDRESS & EXTERNAL PORT VALUE AT ACCESS NODE OF SOURCE
S404
FORWARDING DATA TO DESTINATION
S405
CONVERTING GLOBAL IP ADDRESS & EXTERNAL PORT VALUE INTO PRIVATE IP ADDRESS & INTERNAL PORT VALUE AT ACCESS NODE OF DESTINATION
S406
FORWARDING PACKET
S408
END

FIG.7

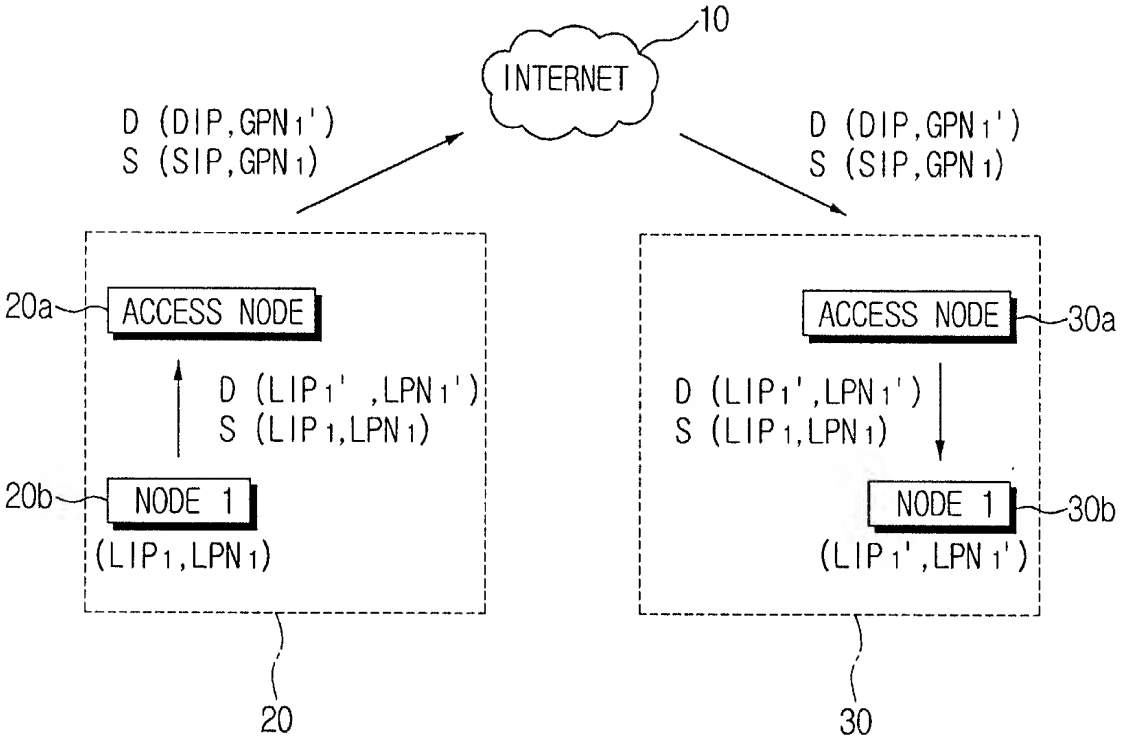

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FIG.8

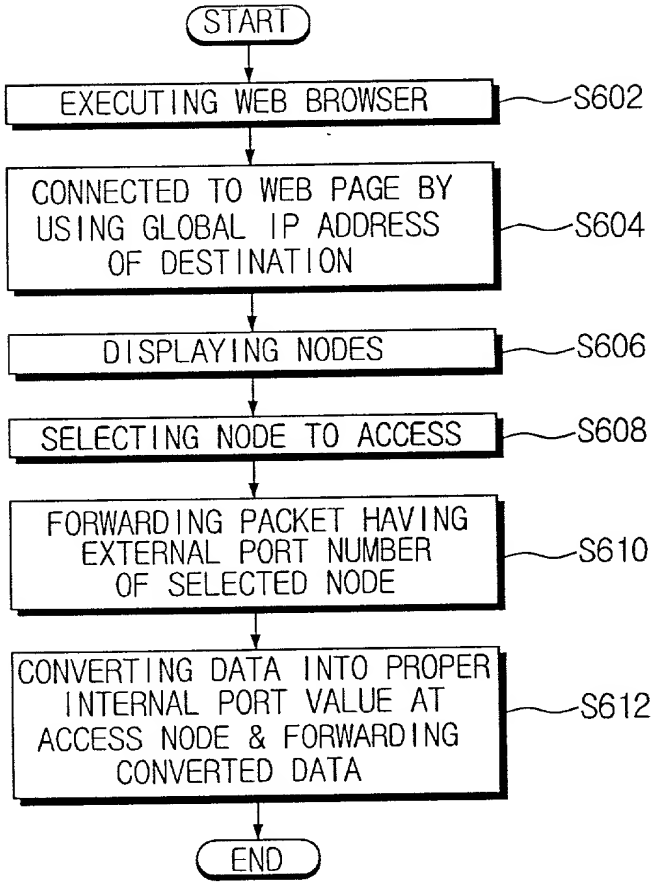

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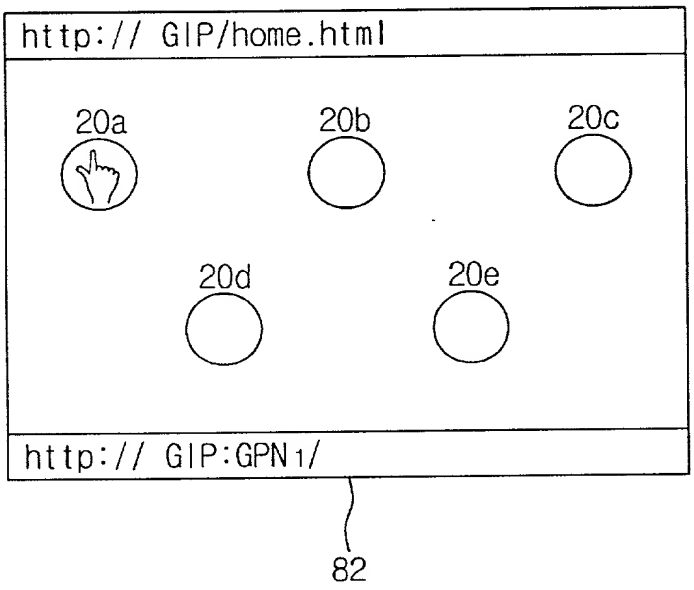
FIG.9



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